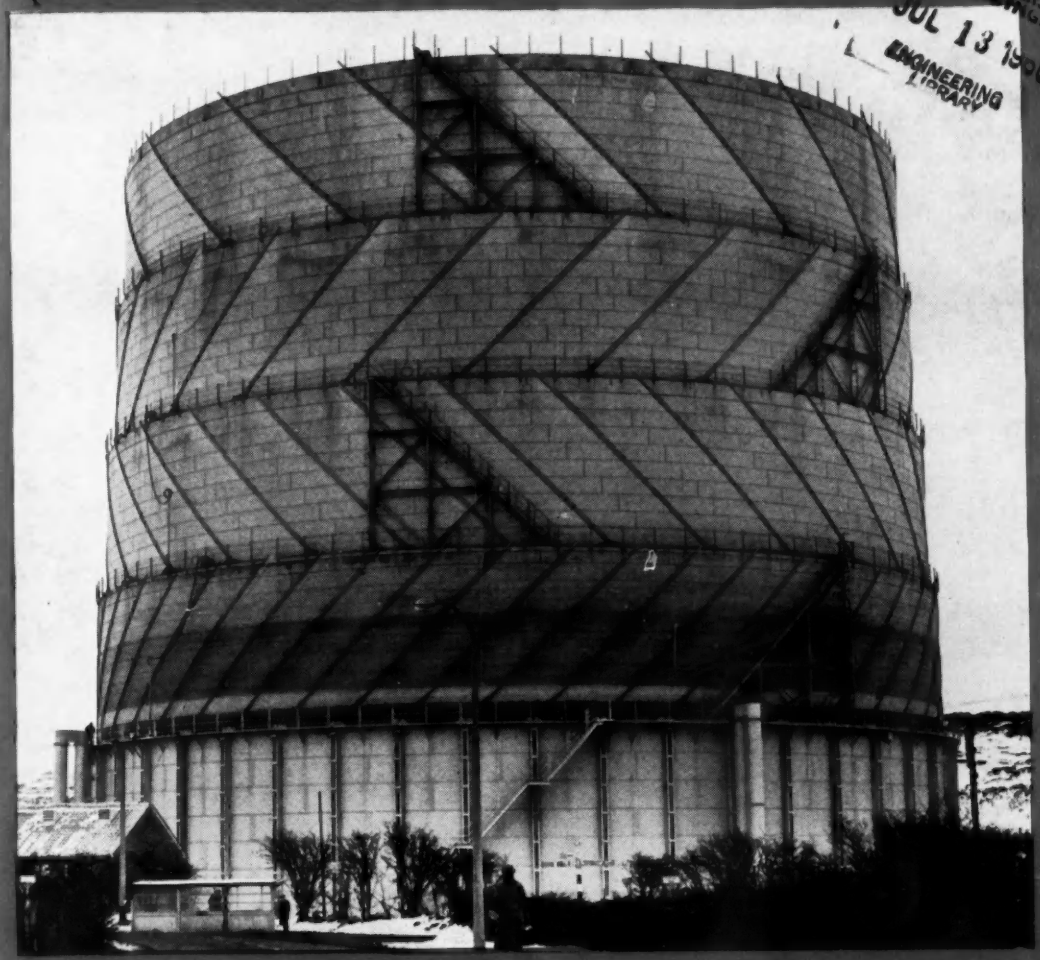
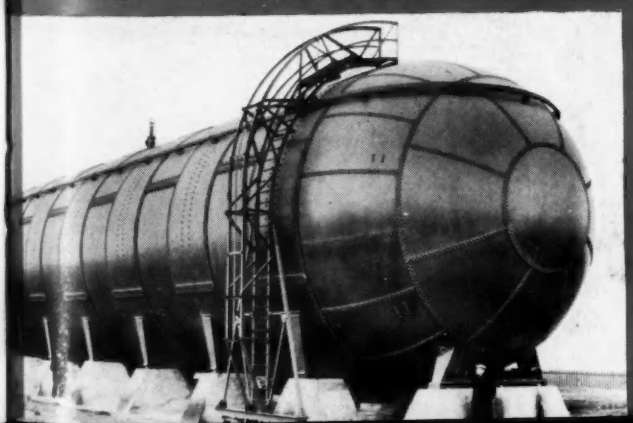
Gas Journal

VOL. 302 112th YEAR LONDON, JUNE 22, 1960 No. 5051 PRICE 1/6

THE UNIVERSITY OF MICHIGAN
JUL 13 1960
ENGINEERING LIBRARY



NEWTON CHAMBERS for Gasholders



For over a century Newton Chambers have been leaders in the design, construction and installation of all types of gasholders—column guided, spiral guided and high pressure gasholders, and of both riveted, and more recently, welded construction.

They range from the smaller holders of 50,000 cu. ft. capacity to the largest spiral guided holders of 8,000,000 cu. ft. capacity, two of which we have installed at the Wincobank Works, Sheffield, of the East Midlands Gas Board.

Newton Chambers

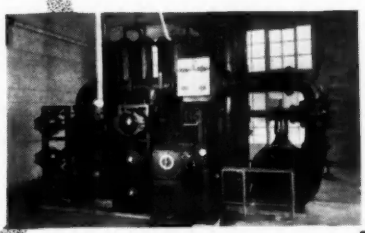
NEWTON CHAMBERS & CO. LTD.
ENGINEERING DIVISION,
THORNCLIFFE, SHEFFIELD.

INVEST IN

BENZOLE RECOVERY

SULPHUR REMOVAL

In terms of benzole extraction a Sutcliffe Speakman plant pays for itself over and over again: extraction is consistently high—100% having been recorded in some instances. If the problem is the removal of organic sulphur, particularly from gas used in industrial processes—e.g. glass-making, metal annealing—then Sutcliffe Speakman plant is again the answer. These units are compact, clean working, economical to run and automatic in operation. Capacities range from 100,000 cu. ft. per day: there is no upper limit. Sutcliffe Speakman are specialists in the manufacture and industrial use of carbon. They will be pleased to study the needs of any gas undertaking or gas user and advise on benzole extraction or sulphur removal.



SUTCLIFFE, SPEAKMAN
& COMPANY LIMITED
LEIGH, LANCASHIRE.
TEL: LEIGH 94/5/6

London Office:
2 Caxton Street, Westminster, S.W.1.
Telephone: Abbey 3085

SUTCLIFFE SPEAKMAN

the MARK II "CL"

High Pressure Valve

- *CORROSION RESISTING STEEL DOOR*
- *P.T.F.E. 'FLUON' SEATING RINGS*
- *SIMPLE AND ROBUST IN CONSTRUCTION*
- *POSITIVE IN OPERATION*
- *NO WEDGES OR SPRINGS*
- *SPINDLE STUFFING BOX FITTED WITH CHEVRON PACKING*
- *STANDARD TEST PRESSURE 100 p.s.i.g*
- *RAISED FACE FLANGES SUPPLIED BLANK OR DRILLED TO B.S.10 TABLES 'A' TO 'E' INCLUSIVE*
- *INTERNAL SCREW WITH OR WITHOUT INDICATOR*

SIZES 2" TO 24" BORE
VERTICAL OR HORIZONTAL

THE BRYAN DONKIN COMPANY LTD.
CHESTERFIELD TEL: 3153 · LONDON TEL: ABBEY 1096

PAXMAN
BOILERS

SHELL & WATER TUBE TYPES
FULLY AUTOMATIC PACKAGED
COAL OR OIL FIRED

FOR
ALL
INDUSTRIAL DUTIES

ALSO MAKERS OF
ROTARY VACUUM FILTERS
PRESSURE VESSELS
& INDUSTRIAL PLANT

DAVEY, PAXMAN & CO., LTD.

BOILER & INDUSTRIAL PLANT DIVISION

COLCHESTER
ENGLAND

Phone: Colchester 5151
Grams: Paxman Colchester Telex.
Telex: 1875

B.79

Gas Journal

VOLUME 302 • NUMBER 5051 • 112th YEAR

WEDNESDAY, JUNE 22, 1960

CONTENTS

EDITORIAL COMMENT

A Possible Come-back for Coal Gas? - - - 515
Making Friends with Architects - - - - 516
Mr. Robens' Task - - - - - - - 517
Successor to Watson House - - - - - 517

97th ANNUAL GENERAL MEETING INSTITUTION OF GAS ENGINEERS

The Architect and the Gas Engineer. By R. Baden Hellard - - - - - - - - 518
A.G.M. Visits—Pictures - - - - - - - 523
White Lund—Some Aspects of a New Works. By F. C. Buckley - - - - - - - 524

NEWS SUPPLEMENT

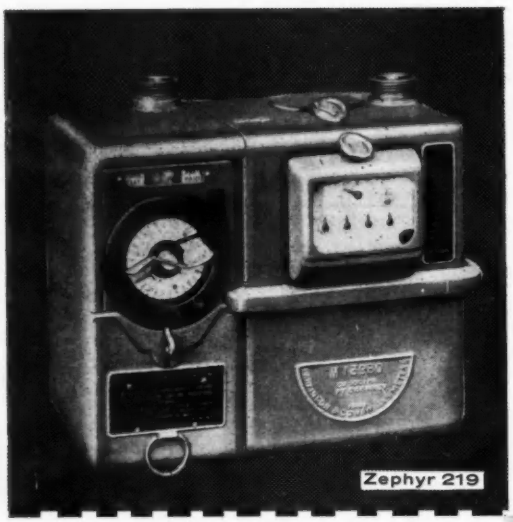
Watson House Centre to be Replaced - - - 531
West Midlands Output for 1959-60: A Record - 534
New Gas Meter Diaphragm Laboratory - - - 534
New Loan Scheme to Aid Central Heating Buyers - 534
Main Purged in Night Operation - - - - 534
Personal Notes - - - - - - - - 535
Awards for Gas Board Editors - - - - 535
60-Year-Old Coking Plant Closes Down - - - 535
Coming Events - - - - - - - - 535
Obituary - - - - - - - - - 535

Editor :
GEOFFREY W. BATTISON

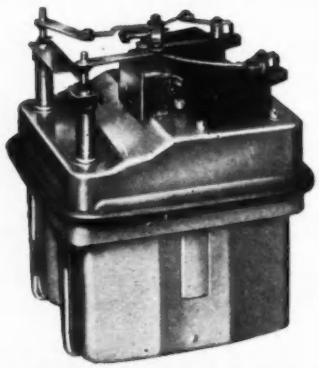
Assistant Editor :
COLIN J. GODBOLD

Technical Editor :
CHARLES J. P. DE WINTON, T.D., M.A., M.Inst.Gas E., M.Inst.F.

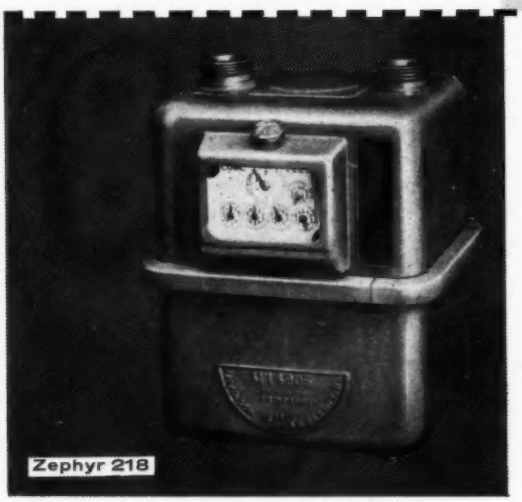
PUBLISHERS' NOTICE, SEE PAGE 352, JUNE 1, 1960



CUT GAS METER MAINTENANCE COSTS



WITH **UNIT CONSTRUCTION**



Gas meter maintenance can be expensive. UNIT CONSTRUCTION cuts the cost by saving time and labour. The Parkinson Cowan Zephyr is unit-constructed. Its two-part steel case can be dismantled within seconds to give immediate access to the removable measuring unit. Cut maintenance costs with UNIT CONSTRUCTION

PARKINSON COWAN GAS METERS

Leaders by Design—since 1816

TERMINAL HOUSE · 52 GROSVENOR GARDENS · LONDON · SW1

TELEPHONE: SLOANE 0111 · TELEGRAMS: DISC, LONDON

Gas Journal

COKE OVENS • BY-PRODUCTS • CHEMICALS

A possible come-back for coal gas?

TO include the description of a carbonising plant among the papers read at an Institution meeting is now becoming something of a rarity, so it was both with pleasure and a feeling of nostalgia that we read Mr. F. J. Buckley's paper, 'White Lund—some aspects of a new works,' which he presented at the recent meeting of the Institution at Edinburgh.

When this particular works was commissioned some 2½ years ago and later officially opened by the then Parliamentary Secretary to the Ministry of Power, Sir Ian Horobin, we were under the impression that this plant was likely to be one of the last carbonising plants to be built, at any rate by the North Western Board. That another plant employing intermittent vertical chambers is likely to be commissioned in another part of this Board's area in the near future, does not weaken the general argument that in the minds of many gas engineers, the days of the manufacture of town gas from coal in conventional plant are numbered.

Another paper presented at this meeting, that by Mr. T. S. Ricketts, describing the Lurgi plant at Westfield, Fife, and the discussion that followed it stressed this even more and set out quite clearly the possibilities and advantages to be gained from the manufacture of gas by such new processes being developed at the present moment.

It is not surprising, we feel, that it may have become something of a habit among some gas engineers to 'write off' the conventional gas-making systems and invoke the magic of gasification.

The reasons for this are perhaps not really very hard to find, though it has been well established that the actual processing of the coal in a modern carbonising plant can compete economically with any other gas-making process. The great drawbacks of the conventional plant are clearly that the process demands a high rank coal, which is steadily becoming less available and so more costly, and that it produces a solid residue in the form of coke, a commodity which is becoming increasingly difficult to sell.

In the area served by the White Lund works, however, the demand for coke has always been high, and this was one of the reasons why a carbonising plant was considered at the time it became necessary to replace manufacturing capacity in the Lancaster-Morecambe group.

It is interesting to consider, nevertheless, what feasible changes outside the immediate control of the gas industry could in fact alter the economics of gas-making to such an extent that carbonisation would cease to be obsolescent and interest would be aroused once more in its future development.

The three most vital factors influencing any process of chemical manufacture over which it has little control are the price of raw materials, the cost of transporting them to the plant, and the ease or otherwise of selling the by-products.

Would it be safe to assume that if there was a sudden drastic drop in the price of gas coals, that there would be an immediate return to an interest in carbonising techniques by the industry? There is no doubt whatsoever that any such reduction would be welcomed since it would allow cuts in gas prices to industry and the general public; it is conceivable that sales of industrial gas would rise sharply and there might be a rush to install gas-fired furnaces. The use of gas for space heating would be considerably encouraged and the industry would be in a far stronger position to compete with oil on the most vital issue of all, that of price.

There would still remain the factors of transport costs and coke saleability. The former could be got over by building new carbonising plants at the collieries as is advocated for gasification plants. Here we are running into two major snags. Is there sufficient land available at the collieries for the very large

carbonising plants which would be necessary? The great advantage of the high pressure Lurgi type of plant, or for that matter oil gasification plants, is the smaller site needed for the increasingly large volumes of gas expected from these centralised plants, and the fact that the gas is already at a high pressure for transmitting over the longer distances involved. The cost of raising the pressure before the process does appear to be less than compressing the gas before transmission.

The second snag is that with these very large carbonising plants, the distribution of coke to the customers' coal cellars would be an even greater problem than it is now and far more costly. The area boards would be in a similar position to that of the coking industry at present, except that the latter's chief customers are comparatively few but buy in large quantities. Despatch of gas coke by rail in bulk to local distribution centres would have to be extended but here again rail freight charges must be taken into account.

The quality of the coke produced is becoming of increasing importance, and must be both high and consistent if it is to compete in the open-fire market; it must in fact be of premium grade. It does seem, therefore, that the familiar gas coke made from high-rank gas coal is unlikely ever to be in sufficiently high demand to justify its manufacture on a really large scale in the future.

The successful outcome of the use of these modern high-pressure processes depends to a large extent on the very high output per unit of plant and the small labour force needed, principally for supervision and maintenance. The high capital cost of such plants may well act as a deterrent to their installation unless depreciation and other charges can be quickly written off by the accelerated 'turnover' made possible by a high output.

We feel, therefore, that efficient and obviously successful as the White Lund plant is, the very characteristics of the gasification plants which we have referred to, fit in so well with possible future trends, that little can be gained from any great extension in the building of even the most modern types of carbonising plant, although coal prices might drop significantly.

Making friends with architects

IT has taken a long time for the gas industry to realise that its future prosperity is to no small extent dependent on a proper understanding by the architect of the service it offers. It often seemed as though the industry's attitude was: Well, here is gas, a jolly good fuel, and it is up to the architect to find out all about it. That may have been satisfactory years ago, but it certainly will not work today. There is no possible doubt that a very large proportion of architects are not fully aware of what gas can do in terms of efficiency and economy to heat the modern home. And, equally, if we want that situation rectified we must find out where our technical information is faulty and make haste to put it right.

It may have been a realisation of this need and a desire to improve matters which prompted the inclusion, in the programme of the Institution meeting this year, of a paper by an architect. The author, Mr. R. Baden Hellard, called his paper 'The Architect and the Gas Engineer,' but in fact his paper was directed less at the engineer than at the commercial and publicity side of the industry. The Gas Sales and Service Conference might have provided a more appropriate stage for its presentation, but nevertheless we applaud its inclusion in an I.G.E. programme because this is indeed a subject the importance of which must be recognised by all those concerned with the industry's future.

Mr. Hellard sought 'to define the current rôle and responsibilities of an architect in the building industry' and, indeed, went to some trouble to show just how an architect tackles a project, how he collects the relevant information and the somewhat involved relationship between himself and all the other interested parties. We are not concerned here with the technical factors governing the architect's choice of gas (or any other fuel); what does concern us is the machinery for ensuring that the architect is supplied with all the information which will enable him to give gas a 'fair hearing.'

It might be thought that this is a very elementary matter, involving the collation of the relevant facts and their presentation in a convenient form. Elementary it may be, but there is no shadow of doubt that gas has failed dismally in meeting the basic requirement. 'The first problem,' says Mr. Hellard, 'is the ability to file away suitably the information until it is required, and this brings with it the complementary problem of finding it again. Two fundamental requirements emerge from this realisation—classification and size. If all the information were produced to the same size, the filing problem would be made easier; secondly, it is essential to have some readily usable classification, and this—once established—will imply that each information sheet should deal with only one subject.

It all sounds very logical, rudimentary even, and one might question the need for the author to devote six pages of his paper to the series of international paper sizes recommended by, among many other bodies, the Royal Institute of British Architects—were it not for the fact that an examination of the gas literature available to the architect reveals an almost complete lack of uniformity.

In his introduction Mr. Hellard said that, on asking his colleagues for advice on what to say to a gas industry audience, he had been advised 'to be rude and to stress the gulf between our differing approaches to the problem of building.' He took only the second part of this advice for, far from being rude, his paper was a model of restraint. Just how restrained we realised when questioning some architect friends in order to find out if Mr. Hellard's criticisms were justified. The over-

whelming impression we received was of their ignorance of what gas can do. They appeared to be remarkably knowledgeable about electricity and oil, but inclined to dismiss gas as old-fashioned and too expensive. Faced with several examples of good promotional gas literature produced by the Gas Council, area boards and manufacturers, and aimed at architects and builders, they stoutly maintained that they had never seen anything like it before. We felt bound to wonder why. What had gone wrong with the industry's machinery for disseminating information of this kind?

Mention of literature for architects automatically calls to mind the series of supplements produced by the Gas Council and included in the *Architect's Journal;* these are available in a folder as a permanent source of reference. We have always regarded this enterprise as being particularly good, for the information was collected by Watson House and the whole thing was presented in a restrained, lucid manner calculated to appeal to the technical, no-nonsense mind. What does Mr. Hellard think of this series? His reference to it is limited to the introductory article called, if we remember correctly, 'The Case for Gas.' This appears to have annoyed him because the architect 'is not concerned on behalf of his client with the national economy, but only on the economic application to an individual building, and, unless the terms offered by the gas boards' products for installation and running costs are more favourable than for some other product, the architect would not be doing his average client a service by specifying their inclusion.' It would appear, therefore, that what Mr. Hellard calls this 'emotional preference for the beauties and technical ingenuity of gas engineering' was quite foreign to the architect's nature; that what appeared in the gas camp as a perfectly sound statement of the suitability of gas as a domestic fuel from the standpoint of the national economy not only left the architect cold but may even have prejudiced him against subsequent purely technical articles.

It all goes to show that if the architect has much to learn about gas, the gas industry has a great deal to learn about teaching him. This is an urgent problem the solution of which should be sought by all those concerned with establishing gas in its rightful place in the fuel services of this country. We must be grateful to the Institution for spotlighting this subject and to Mr. Hellard for clasping the bit so firmly between his teeth. It would, however, be a mistake to let the matter rest here. I.G.E. Sections, Junior Associations and Salesmen's Circles might all consider how the gas industry's relationship with the architect might be incorporated in their future programmes.

Commentary on the News

Mr. Robens' task

NOW that Mr. Alfred Robens has made it plain that he will not accept the appointment of Chairman of the National Coal Board if there is to be decentralisation of accounts and price-fixing, it is fairly safe to assume that the political climate surrounding the appointment will become less stormy. But the Government's attitude in trying to get Mr. Robens to bring about the kind of State capitalism that already exists in other nationalised industries is understandable. Apart from the railways, the nationalised sector of industry has proved remarkably successful—despite what the critics say. The Minister of Power may have had in mind the extraordinary success of the gas industry in achieving comparatively stable prices through the autonomous working of the twelve area boards. But Mr. Robens, with his intimate knowledge of the coal industry, realised that if Coal Board Divisions were anxious to secure buiness against competition from each other the result would be further drastic man-power economies.

In statements to the Press since the announcement of the appointment, Mr. Robens has shown that his concern will be for the re-invigoration of the coal industry for the benefit of both the miner and the nation. If he is to do good, however, the present state of affairs cannot continue; stocks of coal must be reduced before he can begin to plan and develop the industry anew. He will only succeed in his aims if he manages to cut the price of coal so drastically that the massive infiltration of the oil industry is checked. It may be that, if Mr. Robens got rid of excessive stocks, recaptured some of the trade lost to competitive fuels, and gave the miners back some of their morale, the Minister of Power would be more inclined to release his somewhat inflexible attitude towards the idea of a national fuel policy. If industrialists—and this certainly includes the gas industry—felt that the Coal Board was likely to adopt a more encouraging attitude in the matter of quality and price, they would undoubtedly respond by using more coal.

Successor to Watson House

THE £1,250,000 being spent on the North Thames Gas Board's new building at Fulham, is money well spent. However fine the goods and services offered, the age demands a façade which proclaims appreciation of the aesthetic values represented by the word 'contemporary'. The kindest thing to say about Watson House, the gas industry's appliance-testing, research and display centre, which the new development supersedes, is that the work it is doing is not matched by its external appearance or helped by the over-stretched resources of its general lay-out.

It is a measure of the increased amount of duty it performs that the present Watson House premises, when opened in 1936, were considered more than adequate to meet foreseeable expansion. But in 24 years it has, in a sense, burst out at the seams. The new building incorporates all that is good in modern functional architecture. Above all it has flexibility in its lay-out; and we have a feeling that the main exhibition hall will set a standard of display for the gas industry as a whole. The extensive floor space, more than half of which is at ground level, the absence of pillars, and the adequate storey-height of 16 ft., all mean that testing and research programmes can be carried on without undue consideration being given to handling problems.

The architect and the gas engineer

By R. BADEN HELLARD,
Dip.Arch., A.R.I.B.A., F.I.Arb.

FIVE years ago, Mr. E. D. Jefferies Mathews, O.B.E., presented a paper in which he outlined his views and those, incidentally, of many progressive members of our profession, on the application of architecture to industrial building—the end product of our joint endeavours. He defined the 'ends' of our joint collaboration; I shall accept his definitions and discuss the 'means' of achieveing these ends—the machinery through which our ideals must be realised.

Building has been going through a period of rapid change, brought about by the development of large numbers of new techniques and products. The designer's job, therefore, now presents, in addition to the job of creation, the problem of keeping up to date with the products and tools from which the design will materialise. Should an architect regard himself as the chief draughtsman of a building, or as the prima donna of space, shape, form, colour and texture; as an artist in an economic medium, or as the managing director of an industrial enterprise, the result of which has social and economic significance? Many architects believe that an approach on the lines of the last two suggestions is the more correct one and will not only produce a more efficient result, but a better-balanced work of architecture. The architect will thus need to retain his technical and artistic abilities, and master also the skills of control, communication and co-ordination.

Technical and æsthetic demands

It is the author's belief that no building can qualify for the description of good architecture, unless it fulfils well all the technical and æsthetic demands of the client's problem. These requirements include the integration of special planning in three dimensions, functional adequacy, and efficiency in the heating, lighting, ventilation, plumbing, sanitation and acoustic services, and the durability of floors, walls and fitments and their finishes. All these technical requirements reflect on, or dictate, the framework of amenity, the pleasantness or otherwise of the human environment in which the occupants of these 'machines for living, or working' in will find themselves.

Each project must be treated on its merits. In some cases, regard to the maintenance of running costs of a building may suggest that very much more should be spent on the first costs of the structure, so that over its economic life the overall cost to clients is reduced. This 'costs in use' concept is one now receiving study by the Operations Research Unit of the Building Research Station. For example, in considering a heating system, the capital cost of a simply installed electrical system may be very much lower than the provision of gas equipment or an elaborate oil- or solid fuel-burning system, but its running costs may be so great that the initial economy achieved by reduced capital expenditure is eaten up in as little as five years or so, and the running costs thereafter could be crippling. On the other hand, the flexibility of use obtained by local control of a gas appliance may swing the balance in favour of gas against the cheaper general running costs of the other fuels and justify its selection on an overall assessment. Again, clients may take the view that running costs are free of tax, whereas capital costs are not.

Swing in expenditure distribution

It should also be remembered that there has been, and will continue to be, a big swing in the distribution of expenditure for the running of a building. Labour costs are ever rising, and the type of labour required for the control and maintenance of heating equipment is more difficult to obtain. The capitalisation of one man's labour is worth something of the order of £10,000 on the capital cost of the project, and this, too, is a factor that must be considered in arriving at the balance from which good architecture alone can flow. The first essential is to define closely the client's problem, and then attempt to provide the answers. In this way, there can clearly be no preconceived idea of the solution either technically or in terms of architectural style.

The process of design, and perhaps building design in particular, is the making of inter-related decisions. If we now examine each of the stages in turn, it will be seen just what information is needed by the architect to enable him to take these necessary decisions.

Stage 1.—The Brief: This is the time when the architect and his client get together to establish just what the client's requirements are. On the one hand, the client, however expert he is, will not be able to define his problem in such a way that the architectural solution is automatic; indeed, it is not good that he should. On the other hand, the architect, however familiar he is with the subject, must carefully examine and understand the particular relationships and priorities of the client's problem. During this stage, the architectural possibilities of the points raised will occur, and the architect will endeavour to reach agreement with his client on these matters—particularly with regard to the relative importance of the different require-

Mr. Baden Hellard is Hon. Secretary, Royal Institute of British Architects Management Committee, and Chairman of the Joint 'Cost' Liaison Committee with the Royal Institution of Chartered Surveyors.

ments, so that when he begins to design he will be able to make the correct decisions on the compromise that will always be necessary.

Stage 2.—The Sketch Design: As the sizes and shapes become known and their relationships to each other charted, drawing-board planning shows up alternative dispositions and their advantages, until at the end of the sketch-design period the architect is able to show the solution of the problem in terms of buildings, probably with sketches of certain important internal and external positions. During this phase, he will have taken the principal decisions on the type of structure, shape and services, single or multi-storey, steel or concrete frame, timber or concrete roof, brick walls or light claddings, unified central heating or locally controlled units, and he will know broadly what alternatives will be finally possible when he gets to designing the details.

Stage 3.—The Detail Design: With the client agreeing to the necessary operation, the architect now embarks on the detailed exploration of the building to ensure that all the structural members will fit together properly. The architect then carries out adjustments to his original scheme until eventually he is satisfied that it will all work, and then commences the final stage.

Stage 4.—The Working or Contract Drawings: This is the detailing of construction in the form of working drawings and specification, which are, in effect, the architect's orders to the contractor on what to use, how to use it, and where to put it! These two later stages in the development of the building design account for about half of the total time spent by the architect.

During stages 1 and 2, the information the architect will require on a product or service will be only that which gives him the broad understanding of the capacity, size, shape, location, cost, and appearance, to enable him to fit it in to his sketch design. In the third stage of detail design, once he has decided to incorporate the product he will need much more information, and probably a detailed quotation or even tender from the supplier, so that, when he comes to pass on the instructions to the main contractor, during the fourth stage, he is fully conversant with everything about it that will affect the building and its design.

Many inter-related decisions

It should now be obvious that the choice of a gas service or product will involve the making of many inter-related decisions by the architect, and that these decisions will be based upon, and only upon, the merits of the particular appliance or service under consideration. For many buildings, a gas service would not be included by the architect as a matter of course, for it will represent one further service, sub-contract, public utility undertaking, to be co-ordinated, and, in the complex of organisation that every job presents, the elimination of one whole group would be no small incentive!

Thus, it could be argued that gas products in many cases start under a disadvantage that must be overcome before they are considered side by side with, for example, an electrical product of similar capacity or cost. Certainly, woolly presentation of their marginal advantages will not help. A clear statement of their limitations and pertinent applications is more likely to improve their chance of notice and, therefore, selection.

(In Appendices 3 and 4 a comparison is given of alternative heating systems, their advantages and disadvantages and their 'costs in use,' together with sketch plans of typical homes.)

DISCUSSION

Dr. W. Davidson (Bratt Colbran Ltd.): Mr. Hellard's paper gives us a very real and full appreciation of the many and varied services which the architect is called upon to provide in the co-ordination of the contributions made by the various specialists in building contracts, both big and small. His task is certainly a difficult one.

Take, for example, the question of the heat services and the guidance he is asked to give to his client. The architect is at all times, as Mr. Hellard said, besieged by enthusiastic salesmen, no doubt sometimes over-stating their respective claims, and it must be extremely difficult for him to obtain the true basic facts.

Mr. Hellard has adopted the only correct approach to the choice of heating equipment by taking account not only of the capital costs, but also of the operation and maintenance costs of the equipment over a period of years. He rightly points out that in his comparisons he has not compared like with like, and it is in this that I feel that we must assist him and other architects who have the same realistic approach.

Costs reasonably accurate

The capital costs recorded for the five schemes in [appendix 4] are no doubt reasonably accurate, being based on equipment costs provided by the manufacturers, plus builders' costs estimated by Mr. Hellard and his colleagues. These costs may appear high at first sight, but it should be remembered that they are total costs, including installation, builder's work, flues, chimneys, even the proverbial kitchen sink. They are, however, comparative and therefore serve the purposes intended.

The operating costs, however, are not related to the same standard of space and water heating. For example, scheme 2A provides background heating at 50/55°F. at all times, and 67°F. in the sitting area and 60/65°F. in the living and dining areas for eight hours a day, in addition to 250 gal. per week of hot water at 140°F. at the tap. Scheme 2 gives a substantially higher standard of space heating with correspondingly higher operating costs. Schemes 1, 3, 4 and 5 give lower standards of heating than 2A, and to attain, admittedly very approximately, the same equivalent standard, the fuel consumption would require to be increased by something like 40% for scheme 1, 30% for scheme 3, 15% for scheme 4 and 20% for scheme 5. The 'full cost in use' over 25 years referred to in [Fig. 2] would then become £2,200 to £2,500 for schemes 1, 2, 3, 4, and 5, compared with just over £2,000 for scheme 2A.

These estimates take some account of the following factors: First, average operating efficiency, the following values being taken: Scheme 1, 50%; scheme 2A, 70%; scheme 2, 75%; schemes 3 and 4, 65%; scheme 5, 100%. The second point is the flexibility of the system; that is the ability to give the desired amount of heat when it is required, a most important factor because of the intermittency of the heating in our homes.

The most flexible is the gas-fired system and the least, the electric floor heating system, giving continuous heating at the full standard, day and night. The third point is temperature distribution in the living area, giving credit for the better temperature gradient of the floor heating system. Lastly, standby burning rates between periods of high heat demand. It is obviously wasteful to give high heat output during standby periods, that is, during the night and during unoccupied day-time periods. These standby rates are very

low for the gas-fired system, comparatively high for the solid fuel systems and highest for the electric floor heating system.

Far be it from me to expect Mr. Hellard to accept these amendments to the cost comparisons without further evidence, and I hope he will support the suggestion I now make, that the Gas Council should get together with the Building Research Station, the Heating and Ventilating Research Association, and preferably with other fuel interests, to carry out an investigation of operating costs for different domestic heating systems. Such comparisons should be made by requiring each system to give the same 'equivalent temperature' standards in the occupied part of the room—floor to 4-ft. above the floor—at specified periods of the day and night to simulate average requirements of use. The same standard hot water demand should also be met.

Easier to advise clients

Armed with these basic comparisons, the architect would find it easier to advise his clients on the space and water heating system best suited to meet his requirements.

Many other factors must, of course, be considered by the architect and his client. Today, even for the smaller house, there is an increasing demand not only for higher standards of comfort but for these to be provided wth the minimum of attention and labour. Operating costs must be kept to a minimum.

Mr. Hellard's comparisons, particularly when these are related to similar comfort standards, show that the gas-fired warm air system, being highly flexible and fully automatic in operation, giving the desired amount of heat when and where it is required, compares favourably with other alternatives for meeting the widely varied heating demands imposed by our changeable climate.

Mr. L. W. Andrews (Watson House): We have had presented to us a paper by an architect who is doing what an architect should: He really is looking at the total cost of a service and looking at the interest of his client, and we literally can ask no more than that; but he puts right in front of us a basic problem: He is a busy man: What to us is all, to him is one facet of his problems.

When we look at the paper, I am afraid that we have not really got across, as we had hoped to do. Taking an example of Mr. Hellard's appendices, quite one of the most fascinating parts of the paper, he does, in fact, take two examples and offers to us a widower and one child; to electric floor warming, he offers a young couple with two children. I do not think, quite honestly, that the case is proven for that. On [p. 27], Mr. Hellard lays down four basic considerations to bear in mind in the choice of a fuel. These four factors are the four factors that I should put down if I were making a case for gas. They are factors which affect the flexibility in time and space in a house. In the second example, of the man and his wife and two children, the complete technical answer is some form of background heating by warm air or by small bore central heating plus gas fires for the space heating, and somehow we have failed to get that across.

I think the best thing I might do is to say what we try to put over to his profession, in a coldblooded technical way, are the facts about gas. We have got to do some fresh thinking. The first thing we are doing is to collect more and more practical examples from the 12 gas boards of installations with which the consumer is happy, the consumption and installations costs are there, correlate those and hand them over.

Secondly, the industry has carried out field trials of 154 houses over the whole country in which the best type of gas and coke are used. There we have modern installations with known fuel consumption and known comfort conditions. That information is being prepared and assessed by us and will be on an even firmer foundation than any theoretical figure; and it is being issued and analysed on the same basis as that used by the research station.

Thirdly, we are having done an independent check by an outside quantity surveyor on the capital and installation costs of a number of systems, including warmed air heating and electric floor warming in multi-storey blocks of flats. That information is ready and does show, to our relief, that in a multi-storey block of flats, if one takes a complete hot water and space heating service, we need not fear the capital and installation costs outlay which I think will be improved.

The next point—and this is delicate ground—there is going to be re-issued a supplement of the *Architects' Jounal*. Mr. Hellard made his rudest remarks legitimately when he referred to the 'Case for Gas' in the supplement. We are utterly unrepentant. That supplement was written by an architect for the *Architects' Journal* in 1956 when we were importing 12 mill. tons of coal a year, and we were asked to put in something about the national fuel situation. I agree that the position is different now, and we are re-writing 'The Case for Gas'. We are withdrawing from it the national aspects and concentrating on the practical side of the advantages and disadvantages of gas, with emphasis on the advantages.

Finally, we are preparing an entirely new book or booklet in two parts. Part I will quite fully and coldbloodedly deal with the advantages of gas in competition with other fuels. It will be quite a formidable document. It will have examples, and it will be written very much with the architect in mind. I hope that will help to give a clearer picture to the architect of what gas can do with examples of what gas has done. The second part of the book will be much thicker and will be purely technical. It will give technical details, and I think, matters of less interest, possibly, to the architect.

I would like to mention two more things. The first is that the architect, busy though he may be, and Mr. Hellard apparently is a very busy man, never forgets that we can establish, with an all-gas service, the same running costs as will give you at least 22 units equivalent to one therm. It is a yardstick. We can do better than that, but you can never go wrong—22 units equal a therm. Secondly, the small bore central heating system is a very flexible system with clock control and thermostat.

No substitute for contact

One last word. None of this technical data, in my personal view, substitutes for the personal contact between an expert on the gas board and the architect. I believe that personal contact must be established primarily on a series of practical examples of satisfied consumers with satisfactory gas bills. It is that which will have a snowballing effect which I am happy to say has already started to happen.

Mr. E. E. Blandon (Thomas Potterton & Co. Ltd.): Like the previous speakers, I read Mr. Hellard's paper with interest and a large measure of agreement up to and including appendix 2, but appendix 3, not at all. I did feel that in it there was a very noticeable change of tone. Mr. Hellard is giving this comparison of systems in a cool and objective sort of way until he has occasion to mention hot water radiators and then, it is 'these cumbersome, dirty, and difficult to clean radiators.' One does not like to be rude to a guest either, but I do think that this is an unnecessarily emotional, almost a malicious, statement! Going on from there, the other references to hot water central heating are very much in the same vein—'any

central heating system based on hot water radiators is 'wasteful'; 'control of the individual room temperature is virtually impossible.' These statements are not merely untrue, they are just about the exact opposite of the truth because it is a matter of fact that a hot water central heating system with a gas-fired boiler is just about *the* most accurately controllable system of heating yet devised.

Could one have better proof of this than the fact that the Electric Development Association some years ago wanted a thermostatically controlled room for testing refrigerators and they put in a gas boiler and hot water radiators. The Leeds General Hospital a little while back wanted a thermostatically controlled room for keeping premature babies in, and again they chose a hot water system for this purpose. So some people do seem to think it is controllable for some very important purposes.

Again, all in the same part of the paper, we have this remark from Mr. Hellard about the general public 'subconsciously realising' these things. Well, during the last financial year, something like 100,000 ordinary householders—perhaps they went to a psychoanalyst—had their sub-conscious inhibitions removed and put in hot water central heating as a result, which is vastly more people than ever did this in any previous 12 months of this country's history.

I hope Mr. Hellard will forgive me for quoting so many bits, but he talks about this way of getting heat from the fuel to water and from water to air as an unnecessarily complicated method. Comfort condition is not the same thing as air temperature. For air conditions there has got to be a convection balance and a radiation balance. There has got to be suitable air temperature and suitable temperatures on the surrounding surfaces. It is true these things can compensate one another to a certain extent but not in anything like 100% either way; so it is always a question of warming the air and the structural surfaces. If you do it by warm air methods, you warm the air direct and via the air you warm the structural surfaces. If you do it by flooring heating or other methods of heating, you warm the surfaces and via the surfaces you warm the air. Hot water radiator systems are the happy medium, they are in the middle. They are contributing their heat both by convection to the air and by radiation to the surrounding surfaces and also, to some extent, direct to the occupants of the room.

Half the heating of other schemes

[Appendix 4] has already been dealt with by Dr. Davidson. I just want to support what he said. By my reckoning, scheme 5, the floor heating scheme, by the time you allow for heat wasted at night and heat wasted from the building, is only giving something like half the heating of the other schemes. I do think it is wrong, even with a disclaimer, somewhere else in the paper two or three pages away, to put down things which are so unlike as that in a table of comparison. I do hope when this thing is finally printed the disclaimer will be on the tables themselves in large capitals!

Dr. A. E. Haffner (Member and Chief Engineer, Southern Gas Board): In connection with [section V on p. 9], 'What is good architecture?' I want to speak of the public reaction to the principal architectural unit that we have in our industry, the gasholder. In the current Summer Exhibition of the Royal Academy, in the architectural section, there is a model of some new buildings for the Faculty of Arts in Birmingham, and it greatly resembles a gasholder accompanied by a smaller, almost rectangular building. The problems are very similar because the gasholder is used for a hostel, which represents overnight storage, and the smaller building is the compression station where the lecture rooms will be found. It is pleasing to see this revolution from rectangular blocks of buildings which are favoured by modern architects. I believe there is something fundamental in man wanting rounded structures! There is, for example, a gasholder stationed in the middle of the Southern Gas Board and it is called Stonehenge. There you will see the attempts of early Britons to build a gasholder in stone. With great courage, they got to stage I without knowing quite how stage III was going to turn out. It is clear that they knew something about sacrificial anodes. But now it is left in a state of semi-demolition, typical of the way contractors leave the site, and the adjoining ground has been sold to the Ministry of Works as a car park!

Functional necessity of gasholder

These spacial relationships and the functional necessity are all covered basically by the gasholder; it is pleasing that we have not yet thought of making a square gasholder; we have not yet thought of having beer in square containers. And, fortunately, the ladies still have not decided to wear square or cubical dresses.

These things are fundamental and I would like to hear the eminent architect's reaction to the gasholder and its spacial relationship and its functional simplicity.

Mr. H. E. Buxton (South Eastern Gas Board): The bias of this morning's discussion has been towards domestic affairs. I would like this opportunity, now that we have an architect with us (I am very fond of architects and I admire their work tremendously) of touching on a somewhat wider field. We in the gas industry are not only rebuilding works but offices, and in this connection, it has been my privilege to work both with my Board's architect and with other architects. We have got on very well, but they have difficulties. These few words are a plea for more co-operation in getting to know one another's difficulties and one another's work more.

To give a small example, we are finding, in our new offices, that the maximum electrical load is greater than that of many of the works we have shut down. We are having great difficulty in finding space for cables for equipment and adequate lighting installations. I am sure that these difficulties are because we do not realise the architect's troubles; they do not realise ours. Anything we can do, as has been suggested in the early part of this paper in the way of exchange of information arrangements I am sure will help us all very much in future relations between our two professions.

Mr. F. J. Brewer (Director, Parkinson Cowan Industrial Products), in a written contribution: In the most informative diagram [Fig. 2, p. 10], the author attempts to show where the work of the architect impinges on that of the gas engineer—the link is a weak one and it may well be the fault of both parties.

Previous speakers have not touched on an all-important aspect of the inter-relationship between the architect and the gas engineer.

Architects are important, but I contend that however good, or however progressive the architect may be, he is of little use in our chain unless more therms of gas can be made and sold as a result of his services.

Important to know facts

Confining my remarks particularly to industrial buildings, it is important that he knows all the facts; the client is very much in his hands for advice. Legislation, and I refer to the Thermal Insulation of Buildings Act, demands that he and we consider the U value of materials used in the construction of such buildings. It is high time that

we adjusted our thinking not to just meeting the requirements of legislation but that a realistic view be taken of all the associated problems. One would not design and build a ship and then decide what engine to put into it.

We are guilty however of designing—and I refer particularly to factories—buildings of adequate proportions for the work to be undertaken without due regard to the method of heating or the processes taking place within the building. Do the processes absorb heat? Do the processes give out heat? What heat input is required to raise the mass of material in the factory? Is it of any importance to keep that mass of material and/or machines warm? What air changes are necessary? What standards of ventilation are required? Not the standards for a well-designed building or factory as it appears on the drawing board, but as it operates and with the type of heating ultimately installed. Personal experience convinces me that often the client pays dearly for this lack of planning.

The heating and ventilating system, having regard to the work being undertaken in the factory, is an integral part of the factory layout and not something to be thought about and added on at a later date. Structural alterations are often necessary when its design is not given full consideration at the outset.

To be blunt, such a course is lack of planning. Design is the architect's responsibility. The ventilation requirement's are inter-related with (a) the processes, (b) the desired comfort conditions, and (c) the mode of heating.

I have seen fine buildings put up with no regard paid to the effects of process heat. I therefore appeal to the architect before proceeding very far with his design, to consider the type of heating to be employed—that which best suits the work and not necessarily the system which he has always used. There are a variety of systems to choose from, but usually one is best for the particular building, and he should allow no more and no less ventilation than the system and processes demand.

The inter-relationship between the architect and gas engineer is one which should start in the early stages and not when everything else has been considered. Planning beforehand can save the client thousands of pounds.

Mr. Hellard, replying: I was delighted that I seem to have stimulated the discussion. This was what I hoped the paper would do. I was delighted to hear Dr. Davidson's suggestion that all the industries—the fuel industries—should get together and thrash out the really comparable heating schemes. I was disappointed that he left the architect out of his party. Of course, he should be there in the chair, which is no doubt what Dr. Davidson intended! He does not want to know the reason behind the facts, he wants to know the facts. The facts speak for themselves, and Mr. Blandon's emotional reaction about radiators should be left on the basis of the facts. I wonder, in passing, could he work for the Electricity Board? I do not know; I think not.

Mr. Andrew's question about comparing the two schemes, the widower and the married couple: I quite definitely said that this was not intended to be a comparison of two like schemes. The object of this being made at all was to show how the factors that go to make up the decision can be very similar in many respects. They can be in the same price bracket, they can be in the same geographical location, in the same sized building, but it only needs one difference to make a completely different solution. That was the point, not that the two schemes were comparable. They obviously are not. It was merely a factor to be considered and I was following the technical information on the point.

I was a bit disturbed that the Gas Council (and I will remember this) intend to put the new facts before us, emphasising the advantages. I would rather see them emphasise the disadvantages because sometimes these disadvantages lead to a quicker selection of the right thing, but I will bear it in mind when we get the Gas Council's new literature.

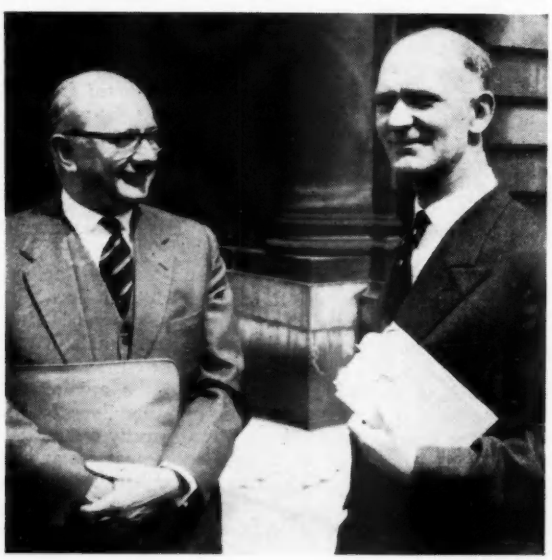
Of course, it does mean that the gas industry has not got across their message if I can set out the factors on which the decision has to be based and then choose some system other than gas. This is completely the point; it was my job to set out the factors and your job to help in providing the answers.

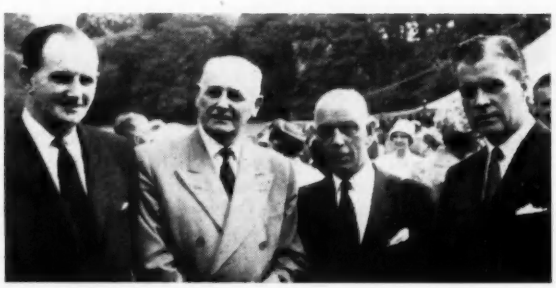
Turning to Dr. Haffner and his gasholders, we were discussing this at luncheon yesterday. I think it is only the gas industry that has this self-conscious inferiority complex about its gasholders. I agree with him. What better shape than a round one? It is not in the thing itself; it is a functional thing. It is, certainly in its size and massing; a satisfactory architect's solution is not the building itself but how you use it. A building has to be there; it is a functional necessity. If a thing is inevitable, make the best of it. I am sure we can do something quite delightful about gasholders.

A.G.M. SNAPSHOTS—I.

Right: *Notable contributors to the discussion on Mr. R. Baden Hellard's paper were Dr. A. E. Haffner and Mr. L. W. Andrew.*

Below: *Mr. E. G. Smith, Mr. W. P. Rae, Mr. L. Fletcher and Mr. A. McFadyen seen at the Garden Party.*





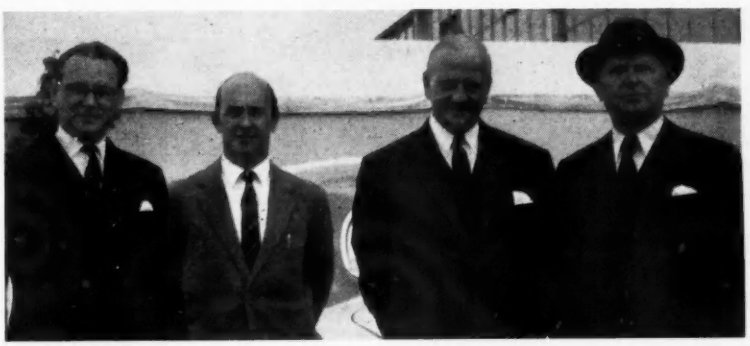
A.G.M. VISITS . . . . . FERRANTI

Visitors outside one of the Ferranti works during their visit.

. . . . . BALFOUR

After the visit to the Balfour group research and development centre, Mr. W. Lindsay Burns, Chairman of the group, spoke of his apprenticeship at Dundee Gas Company 53 years ago.

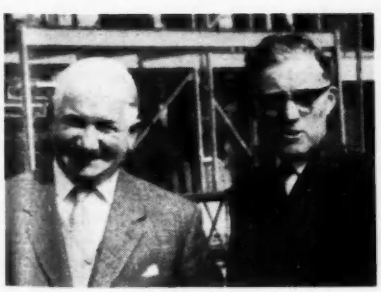
Photo shows, left to right: I. M. O. Hutchison and Lindsay Burns, jun., Joint Managing Directors of Balfour Group, H. S. Cheetham, and W. Lindsay Burns, Chairman of the Group.

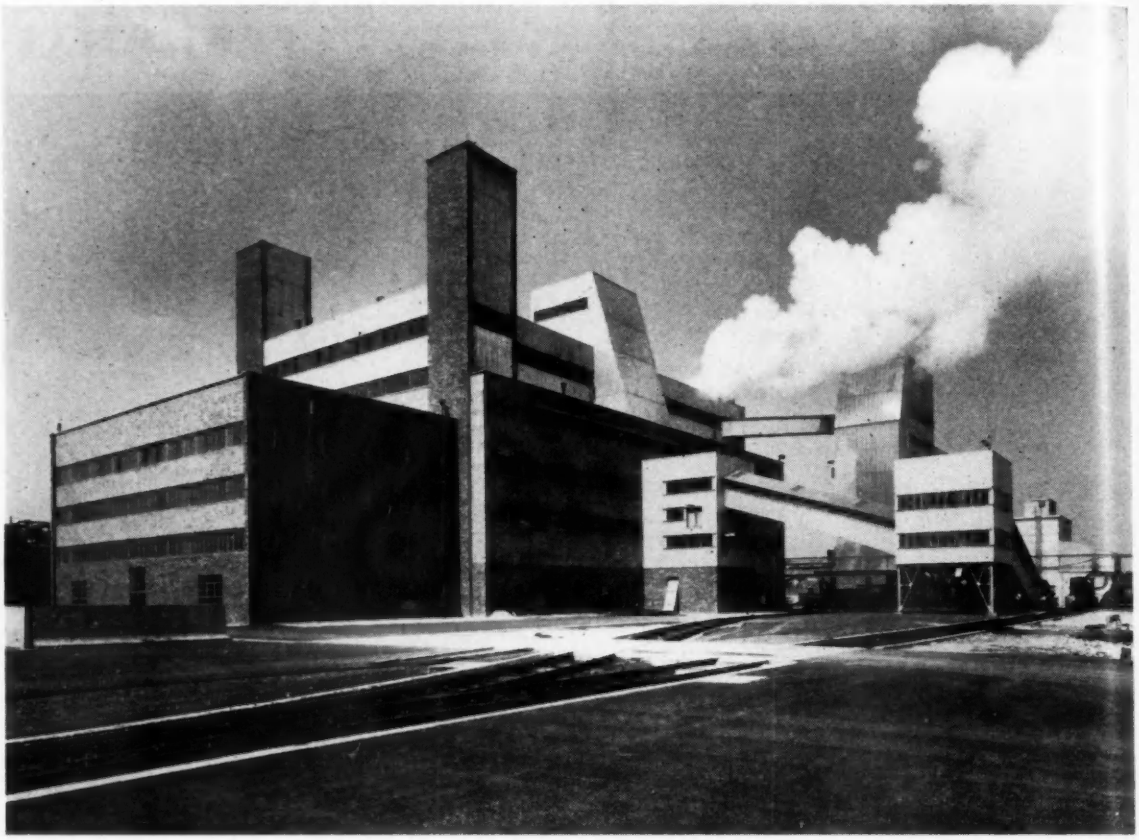


. . . . WESTFIELD

Right, top and bottom: Visitors inside and outside buildings at the Westfield Lurgi plant.

Below: Mr. K. L. Pearce, Divisional General Manager, Notts. and Derby Division, and Mr. B. Clarke, Divisional General Manager, Lincoln Division, East Midlands Gas Board, during the Westfield visit.





Photograph by courtesy of Woodall Duckham Construction Co. Ltd.

White Lund — some aspects of a new works

By F. C. BUCKLEY, M.Inst.Gas E., M.Inst.F.

THE construction of a new works embodying traditional carbonising plant is now a rare event, and completion of the White Lund works, which went into production in April, 1958, may well mark the end of an era in the North West.

The carbonising plant comprises three benches of intermittent vertical chambers 6.77 mill. cu.ft. per day capacity (calorific value 475 B.t.u. per cu.ft.) when operating with Yorkshire singles, using a combination of steaming down and producer gas dilution to reduce the calorific value to town standard. The thermal yield and gas output are modified by the present policy of carbonising washed slack and by intensive oil washing for the removal of organic sulphur compounds.

The area at present served by the works is isolated from any other production plant, and the opportunity is being taken to study the effect of supplying gas with an organic sulphur content of 8 to 10 grains per 100 cu.ft. The economic circumstances applying at White Lund are such that reduction in organic sulphur content can be achieved without incurring a heavy additional manufacturing charge.

In addition to the carbonising plant, a carburetted water gas plant of 1 mill. cu.ft. per day capacity has been installed.

Mr. Buckley is Assistant Group Production Engineer, Northern Group, North Western Gas Board.

This plant is part of a scheme planned by the local authorities before vesting date.

The author describes some aspects of the plant and works planning, but does not attempt a description of the whole works. (We published a very full and well-illustrated description in our issue of July 30, 1958, pp. 215-235.)

The production results obtained with various operating combinations are tabulated and the figures show the flexibility in yields that can be obtained in the initial stage, i.e., with two of the three benches working (based on a 12-hour carbonising cycle). The plant has operated satisfactorily on all cycles from 11 to 20 hours, and, if rapid variation in gas output should be required, the flexibility would be improved by the use of partial coal-gas firing on the settings. The quality of slack coal varies considerably, resulting in a wide variation in gas yield, and the figures quoted are based on a number of average slacks. The plant has operated almost entirely on Yorkshire slacks, and the figures quoted for singles are based on short carbonising tests. Yields for complete steaming down are not quoted, as it is felt that steaming above 7.5% by weight of the charge for slacks, and 9% for singles should be avoided for the following reasons:—

(*a*) Yorkshire slacks will not react satisfactorily to steaming above 7.5%, partly due to shrinkage of the charge, which leaves a gap for the easy passage of steam, and also due to low coke reactivity. Yorkshire singles are more reactive, but there is difficulty in steaming above 9% without extending the carbonising cycle.

(*b*) Heavy steaming leads to rapid deterioration in refractory material.

(*c*) Liquor production is excessive.

External blue water gas dilution has, therefore, been substituted for complete steaming down.

The plant can be operated so as to give the lowest net cost of carbonising materials, and an assessment is given of net cost when carbonising slacks and singles under various conditions.

During the first 18 months operation, Yorkshire slacks from 16 sources have been carbonised. The gas yield to date is higher than indicated in the assessment, due mainly to the inclusion of a considerable proportion of slack of exceptional quality. The continuity of this coal cannot be guaranteed, so that the lower yields are preferred for estimating purposes. A combination of steaming, producer gas dilution and benzole extraction is practiced, and the net cost of carbonising materials confirms the assessment.

No low-pressure distribution

There is no low-pressure distribution from White Lund, gas being transferred to district holders before distribution to consumers. There are two transfer systems. The first is a medium-pressure system used to transfer gas into the holders at Lancaster and Morecambe. Two Bryan Donkin V.P.C. 70 Rateau boosters are installed of 300,000 cu.ft. per hour capacity at 30 in. w.g. pressure difference. One set is driven by a Greenwood and Batley steam-turbine developing 45 b.h.p., using steam at 150 to 190 lb. per sq. in. and exhausting at 15 lb. per sq. in. The standby machine is driven by a Ruston and Hornby diesel engine.

The second system delivers gas at high pressure into the Northern grid. Two Bryan Donkin vertical twin-crank compressors are installed, each having a capacity of 80,000 cu.ft. per hour at 11 lb. per sq.in., and these will handle the full requirements of the first and second stages of the integration scheme. The first compressor is steam-driven, using steam at 150 to 190 lb. per sq. in., exhausting at 15 lb. per sq. in. and absorbing 73 b.h.p. The second standby machine is driven by a Blackstone vertical three-cylinder diesel engine.

The purpose in making the second machines diesel-driven rather than electrically driven is to avoid a heavy increase in maximum electrical demand.

District holder storage is already adequate for existing and forecasted loads, and only one holder, of 750,000 cu.ft. capacity, has been built at the works, to act as mixing capacity and intermediate storage before distribution.

Certain safety devices adopted

Certain safety devices have been adopted to come into action in the event of failure in the system. They are as follows:—

(*a*) An inlet pressure regulator that allows gas to return from compressor outlet main to inlet booster/compressor main if pressure in the latter falls to 5 in. w.g.

(*b*) A non-return valve that operates when the boosters stop and puts works holder pressure on to the booster outlet main *via* the common inlet main.

(*c*) A device similar to (*b*) to maintain pressure in the compressor outlet main.

(*d*) A non-return valve that prevents gas passing back from the booster outlet main to the works holder in the event of accidental stoppage of the booster.

(*e*) In the event of the works holder approaching the grounding position, a switch is operated, which in turn operates solenoid valves in the steam and oil supplies to steam and diesel boosters. The same switch operates a magnetic flow diversion valve in gas impulse to the steam compressor governor, which then closes the steam throttle valve. A compressed air device is also operated, closing the oil supply to the diesel compressor.

The rate of input to the Morecambe gasholder is controlled by a volumetric governor, which is also closed by an auxilliary system when the holder is full. The holders at Lancaster, which work in conjunction with the Morecambe holder, are fitted with maximum-capacity cut-off valves. A further governor in the inlet holder main closes if the pressure in the booster main drops below 29 in. w.g.

Volumetric governors are used to control the rate of flow into holders in the outlying districts. These governors also close when the holders are full.

It is useful to conclude by comparing the present position with the original intentions in planning the new works.

The finished appearance of the works is in keeping with the most advanced industrial standards, and the problem of grit and smoke emission has been overcome.

It was intended that the plant should be capable of carbonising a wide range of coals, but particularly the high quality slacks that it was expected would become available. These coals did not materialise, and the present washed slacks are too highly priced for long-term use. The coal price/quality structure is a basic problem facing the gas industry, and a solution is urgently required.

The rate of expansion of gas loads has reduced, and it has been necessary to slow down the integration programme because of the increased cost of inter-linkage mains. In consequence, the full capacity of the plant is not yet employed. There is now reasonable evidence to show that industrial loads in the Northern Group of the North Western Gas Board will increase, and this may well prove to be the decisive factor affecting the immediate future.

DISCUSSION

Mr. W. Hodkinson (Deputy-Chairman, North Western Gas Board): It would be a gross error of judgment to play down in any respect the importance of carbonisation, or to miss the opportunity of applying ingenuity and new techniques in the carbonisation field. We must remember that much of our future prosperity depends on how we conduct our business in the next five to ten years, and in this period, the new processes can do no more than play a relatively small part in improving our competitive position. In this period too, carbonisation will remain the main process with which we are concerned.

To many, it may seem strange that a new carbonising plant should be constructed today, and there were many special circumstances associated with White Lund, some of which Mr. Buckley has mentioned. Not the least among these was the cost of transporting coke to the Lancaster-Morecambe area, should production cease there. This, of course, poses the problem as to whether an area board should be compelled to maintain a coke service to all parts of its area, or whether ordinary commercial factors should apply, by which the local consumer should pay the full cost of transport from the production point. This is a difficult problem, and it is questionable whether there is a single solution. When we consider the background of the Clean Air Act, which is beginning to make itself felt as the scheduling of smoke control areas gathers momentum, albeit slowly, one wonders whether the industry will ever have to supply a large increase in coke demand, or whether it can side-step this phase by offering gas sufficiently cheaply in lieu.

Among the many points of interest in this paper, it is worth noting how the start-up of the new works was carried out, and the ticklish change-over accomplished in such a manner as to keep redundancy and human problems to a minimum. Another point of interest is the fact that no case could be made out for 'home' power generation, and, indeed, there is much to be said for our industry avoiding the need to spend its capital in doing the Electricity Board's job. One might also refer to the vital importance of laying out the plant so that it can be run efficiently, with a minimum of labour force. This is often lost sight of in any new project. The paper also shows that instrumentation has been used to serve the ends of economy, as also have other techniques, such as the decision to handle the H_2S load from the concentrated liquor plant in the main purifiers, which is surely the right thing to do.

Mr. Buckley refers to the fact that the coals currently available do not meet the expectations with regard to quality and price, which were taken into account when the project was first considered. One cannot overlook this fact. The National Coal Board should realise the importance to its customers of its forecasts of availability of materials at different price levels. These have a profound influence on the decisions taken by its customers, because no new development can be planned at its most economic level unless accurate account is taken of market trends in both raw materials and products within the period of the whole life of the plant.

Mention was made of the reduction of sulphur in the gas in the Lancaster-Morecambe area and that it was difficult to assess the value of this in terms of cash. Quite definitely, we have had an indication that it has great influence on the marketability of our products and on the power of salesmen working in that district.

Mr. A. F. Cottrell (Chief Operating Engineer, Woodall-Duckham): Many will envy Mr. Buckley the opportunity he has had to handle a completely new works, albeit a conventional one, on a virgin site. He has been at White Lund since the foundations were laid, and if he did not actually turn the first sod, he actually did, I believe, turn the first valve. That being so, there could obviously be no one in a better position to make this story technically interesting, and I am sure we can all agree that he has done that.

Turning to the paper itself, I seem to detect in [section III(b)], some sort of apology by the author for an inability to find some feedstock other than coal—presumably, he wanted to explore one of those 'exciting new sources of supply' which we hear so much about. Perhaps he will tell us whether, after his very satisfactory run at White Lund, he feels that he has missed something by sticking to coal.

The choice of vertical chambers for the new plant to replace the only inclined ovens ever erected in Great Britain has been a very happy one, since both types of plant have handled these Lancashire and Yorkshire slacks most effectively. Today, continuous vertical retorts are capable of dealing with practically any coal, without difficulty, but it must be admitted that fines of this kind could present a problem when restarting after scurfing due to infiltration into the coke charge. In the planning of White Lund, of course, the most important factor determining the type of plant was the need to maintain a supply of coke similar to that already being produced, and how well this policy has succeeded. Very few concerns are in the happy position of selling more coke than they can make.

The point made in [III(c)] regarding reliability applies today to any conventional coal carbonising plant and, as Mr. Buckley says and I can personally confirm, the start-up was wholly according to schedule, with the two old works being completely shut down within two days, with uninterrupted working ever since.

Need for high coke yield

[Section VIA(d)] refers to the need to produce a high coke yield per therm of gas made. Presumably, this means that intermittent vertical chambers are not normally steamed to the same extent as continuous vertical retorts and thus produce gas of a higher calorific value with less therms per ton. But the overall coke yield per therm would appear to depend on the method used to reduce this high calorific value to the required declared level. Actually, in view of the very low fuel consumption in modern continuous vertical retorts, there is unlikely to be anything much to choose between the yields under certain conditions.

[Tables 1 and 2] show very clearly indeed how flexible the intermittent vertical chamber plant is as regards the coke : gas ratio, which, by change of coal and conditions of operation, can be made to vary between 12.8 lb. to 18.7 lb. of coke per therm of saleable gas, and still more, of course, if partial coal gas firing is practised. When these figures are read in conjunction with [table 3], the story of economics becomes clear, and shows that the highest coke yields so necessary in this division are achieved by limiting steaming and maximum benzole extraction, to minimise the amount of coke used for the dilution gas. Conversely, lowest coke yields are achieved by limited steaming with added blue water gas made externally. The figures indicate that the first set of conditions gives the lowest cost per therm and the second set the highest cost per therm, but, while figures do not lie, it may be expedient, and good business, to vary them a little as recommended recently by Mr. Hawthorn in those areas where coke is being stocked and, in such cases, it might still pay well to make the minimum amount of coke.

[Table 3] does show, however, that, providing one can

dispose of coke, the net cost of gas-making materials is very low, even within the present Coal Board price structure. As we all know, and it has been emphasised this morning, the nigger in the woodpile is coke.

In [section VIB] reference is made to the arrangements for dust suppression during charging, and in [section VII], to mist and drizzle elimination. According to the author, both these developments, a trunk feeding coal car and baffles in the quenching towers, have worked well. Consequently, the charge sometimes made against intermittent vertical chambers of excessive dust nuisance is being overcome. Actually, at White Lund, the author proves his point by using a most practical test. He put down sections of white chippings at strategic points, and while they remain white, he is satisfied. After that, the Ringelman test seems superfluous.

Sulphur is still with us

The only other point I would like to raise concerns sulphur, a matter which is given too little prominence in the paper. For very many years, the cry has been ' sulphur must go,' but it is still with us to quite a degree. How many consumers have been lost by our failure to remove it, our unwillingness to pay for removing it, is anyone's guess, but I venture to say that the number is much greater than is generally accepted.

[Section X], therefore, is particularly interesting since the author explains that high oil circulation rates are being operated at the White Lund benzole plant to obtain gas with around 8 grains of organic sulphur per 100 cu.ft., a relatively low figure which we are assured enables his sales staff to sell flueless equipment with confidence. But, in view of the need to satisfy the consumer absolutely, I would inquire whether Mr. Buckley is really satisfied with this figure. Is not the real answer complete removal; and has his Board not lost an opportunity of proving this point by failing to equip a new works with complete CS_2 removal equipment?

Electricity has no smell, and quite apart from portable appliances, those of us who get up to make the morning tea know how unpleasant it is having to heat an aluminium kettle with small quantities of sulphur compounds on the bottom.

Mr. R. J. S. Thompson (W. C. Holmes & Co. Ltd.): I was very interested in the author's opening statement that the White Lund works is probably the last conventional works to be constructed in the North Western area. I have heard it stated that probably no more conventional works will be built in this country. I wonder how true this is, and whether the situation might not change drastically if the Coal Board were to charge a more realistic price for coal.

It is quite clear that, with plants now being built in this country, the demand for the 20 mill. tons of carbonising coal which the Coal Board now supplies to the gas industry may disappear completely. My business brings me in touch with the steel industry too, and I am assured by those people who are concerned with it that, even assuming that steel and iron continue to be manufactured on the basis of coke as fuel, no more coke will be required in the future than at present, even though steel production goes up, because of economies in the use of coke which are going on. Even more than that, it is quite obvious that very strenuous efforts are being made, not only in Europe but in the United States, to get away from coke completely, as fuel in the iron and steel industry, and I have seen many samples of iron made by new methods, by using reducing gases. If these efforts are successful, it may be that, in a very few years' time, the Coal Board will find itself short of a market not just for carbonising in the gas industry, but in the coke industry as well, which is some 50 mill. tons a year. I wonder if the Coal Board could face that? It seems to me that, if that situation does arise, they must alter the price structure; even now, with the present price of coal and with the new methods of carbonising such as we have seen, gas made in conventional plants may still compare in price with the new methods. The Coal Board may be forced into the position of disposing of large quantities of carbonising coal at a reduced price.

The carbonising side is not my business; my own interest in the paper relates more particularly to the gas treatment plant.

On [pp. 27 and 35], the author gives some details of the benzole and sulphur removal plant, and quotes operating results and actual costs. The results quoted for the operation of the plant are strictly in line with good practice. The benzole recovery is extremely good at 3.55 gal. per ton of coal carbonised, and must represent a recovery considerably in excess of the 85% for which the plant was designed. The consumption of steam, electricity, re-circulated water and wash oil are also very good when it is considered that the plant is not strictly a benzole recovery plant but a sulphur removal plant with an oil circulation of 27.2 gal. per 1,000 cu.ft. of gas treated. On a normal benzole plant recovering 85% of benzole without particular reference to sulphur removal, the oil circulation would be of the order of 10 gal. per 1,000 cu.ft. of gas, and the consumption of steam, electricity, recirculated water and wash oil would be reduced roughly in proportion to the oil circulation. The cost figures quoted on [p. 35] would therefore be reduced by 1d. per gal. or more if benzole washing only were practised. There would also be a saving in capital charges, since the stripping side of the plant would be less than half the size. This could easily result in a further 1d. per gal. gain.

In the balance sheet on [p. 35], steam has been costed at the very low figure of 1s. per 1,000 lb. On this plant, of course, only exhaust steam is used and this justifies the very low charge. If high pressure steam only is available for a plant of this description, then the electric drives to the various plants can be replaced by steam drive and the exhaust steam will generally suffice for all the process steam required.

The liquor concentration plant

With regard to the liquor concentration plant, the author has put his finger on a very important matter in pointing out that many of the troubles associated with liquor concentration plants rise from an erratic flow of liquor through the system, leading to ' hunting ' of control devices. For this reason, one of the basic controls in this plant is a constant flow controller to maintain the flow of liquor at a constant rate. It is the writer's opinion that, if the supply of liquor is maintained absolutely constant, and the steam supply is kept at a constant pressure, then many of the complicated controls often fitted on such plants are unnecessary.

It is very interesting to note the analysis of the liquor from various sources quoted on [p. 28]. The free ammonia in the liquor from the ammonia washers is quoted as 6% on a weight/volume basis. This is very good indeed, and indicates adequate cooling of the gas and adequate ammonia washing capacity. A stock liquor of 2.8% is also excellent. The ammonia recovered amounts to 21¼ lb. per ton of coal carbonised, excluding the fixed ammonia. This is an extraordinarily high figure, and I would like to ask Mr. Buckley whether these figures are the average of a long period, or perhaps represent a performance relating to some special coal or other special conditions.

If the steam consumption on the liquor concentration plant is related to the weight of ammonia distilled, it will

be seen that the operation of the liquor concentration plant is distinctly economical.

Mr. Buckley, in reply: The North Western Board have explored all alternatives to carbonising and have decided that none is sufficiently attractive to warrant adoption, on a large scale, at this juncture. We must therefore continue to depend largely on coal carbonising in conventional coal gasification plant until a really suitable alternative is available.

To look at the wider issues, carbonising plant in the North Western area is generally in good order, and within reasonable time, the capital burden will diminish. There is thus every incentive to get the best out of the remaining life of existing plant, and, furthermore, to avoid the hidden cost of a large scale turnover, which is the writing off of outstanding capital commitments on existing plant and works.

A great deal does depend on the trend of coke sales over the next few years. I do not wish to enter into the complex field of coke marketing except to point out—and I am not being facetious—that it does often occur that the quality of coke and the state of the coke market are better and healthier where those responsible for its production retain a direct interest and responsibility in its marketing. The President's timely warning of the dangers of over-specialisation has an immediate bearing on this subject.

The removal of organic sulphur down to 8 or 10 grains per 100 cu.ft. is carried out simply and, at White Lund without added cost, by intensive oil washing, which also removes the final traces of many other impurities.

With regard to complete sulphur removal, I am not quite so certain, in my own mind, that a further reduction to 3 grains per 100 cu.ft. would be justified, both economically and in actual effect upon the consumer's attitude. It would mean the installation of another unit of plant, and I think that what we want to do, at this stage, is to study over some period the effect of sulphur removal as recommended by an Institution Committee many years ago.

It does appear that, in practical effect, 8 to 10 grains per 100 cu.ft. seems to be acceptable to the public. I was very gratified to eavesdrop on a conversaton between two customers in a café, in which they commented upon the fact that gas today was a little bit different from what it was before. That is really most encouraging.

The economics of sulphur removal vary from unit to unit according to circumstances. It must be borne in mind that the true way of assessing the cost of sulphur removal by oil washing is to compile an overall balance sheet of the cost of gas manufacture with and without benzole extraction. By this means, the altered yields of products is taken into account and does not, in fact, alter the economic balance, in many cases. However, whatever the cost may be, we then have to decide whether we can afford to do it, or whether we can afford not to do it.

With regard to Mr. Thompson's comments, I am rather glad to have his confirmation that the efficiency of the ancillary plant is to his high standard. There is one comment I would make: The exceptionally high ammonia yield obtained during the first period of operation is rather puzzling. It is rather higher than would be shown by a theoretical system, but we were unable, in the throes of the early days, to have a full investigation. Following many changes in coals and some in technique, the yield has dropped a little so that current yields are something in the region of 3.5 to 6% in the liquor leaving the washer and 1.3% in the liquor leaving the condenser, the maximum ammonia content in the liquor being of the order of 1.8%. This is equivalent to 7 to 8 lb. of ammonia per ton of coal. which I gather is still a pretty high figure. The steam consumption of the plant is reduced proportionally to the drop in ammonia content. I am happy to report a small profit on ammonia recovery.

A.G.M. SNAPSHOTS—2.

Right top: *Two Italian visitors to the A.G.M., Mr. A. Böhm of Turin and Mr. M. A. Spaggiari of Rome.*

Right bottom: *Mr. W. J. Edwards and Mr. B. G. H. Clegg, Southern Gas Board, with Mr. W. L. Howe, North Western Gas Board.*

Below: *Mr. Stanley Bennet, U.G.I. Ltd., Edinburgh, Mr. A. R. Bisset, Douglas, Isle of Man, and Mr. John A. Drake.*

The gas industry gets a new show-case

£1,250,000 THAMES-SIDE LANDMARK TO REPLACE WATSON HOUSE CENTRE

NEWS SUPPLEMENT

WATSON HOUSE, show-case of the gas industry, is to be replaced. Its famous testing and development laboratories, comprehensive displays of equipment, and training schools will be moved in the autumn of 1961.

A new £1,250,000 building at Carnworth Road, Fulham, near the present Watson House, will form a prominent landmark on the north bank of the Thames.

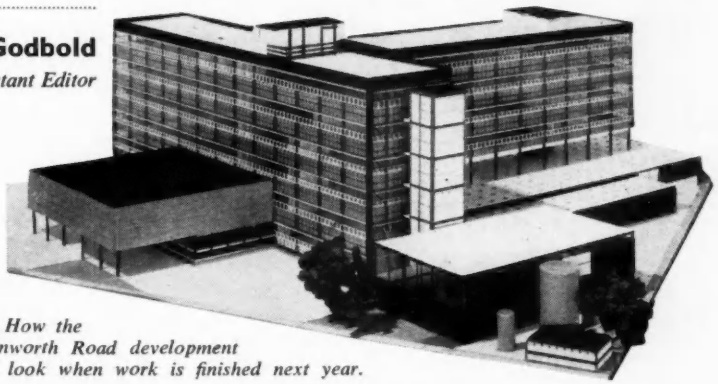
The arrangement whereby the North Thames Board are 'caretakers' on behalf of the gas industry as a whole, is to continue. Some of the cost of the new building will, of course, be borne by the Gas Council.

Most of the Board's administration services, however, are also scheduled to be housed there.

In one wing will go a new electronic computer system centralising the billing for the whole area.

The coke department will also take office space.

By **Colin J. Godbold**
Assistant Editor



● *How the Carnworth Road development will look when work is finished next year.*

BETTER SURROUNDINGS

Supervising the progress of the move is Mr. F. R. Darling, Deputy-Secretary of the Board. He said last week: 'It has long been felt that this important asset of the gas industry should be in better surroundings.'

Like many other progressive industrial developments Watson House, or the London Research Station of the gas industry, as it is also called, had a haphazard beginning.

In 1910 the Nine Elms Lane, Battersea, undertaking of the Gas Light & Coke Company set two chemists to work in a single tiny room . . . . their task was to tackle special problems affecting the use of gas in the home and in industry.

Sixteen years later the two chemists had been replaced by a dozen specialists controlling a staff of 200, including apprentices.

The present Watson House was opened in 1936, the staff then numbering 800.

Now the work of the domestic and industrial laboratories is so great that the rather rambling nature of the layout of Watson House is no longer conducive to maximum efficiency.

There will be no inconveniences in the new building. Heavy equipment such as industrial furnaces will be easily handled on the ground floor—which accounts for well over half the total floor space of 221,000 sq.ft.

No internal columns will clutter the two six-storey units or the two-storey unit housing the electronic computer system.

The storey height of 16 ft. will mean pleasant airiness for the staff. And in the laboratories it will also permit installation of high-level ducting for gas and fume extraction.

AID TO HELIPORT

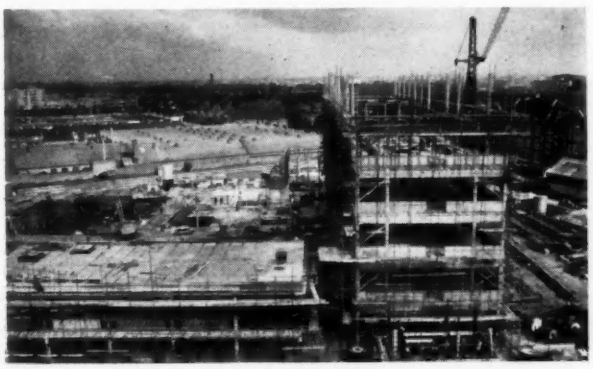
E. R. Collister & Associates Ltd., who designed the building, say that it will no doubt serve as a landmark to helicopters operating from the neighbouring Battersea heliport.

They add that their guiding rule had been: 'To design a functional building which, by its very simplicity and lack of fussiness, is easily adapted to a number of different purposes and is at the same time beautiful and well suited to its surroundings.'

The structure of the building will be revealed by the maximum use of glass in the cladding.

Work is up to schedule. Piling began last October, and most of the structural frame and flooring has been erected. The installation of services and curtain walling is well under way.

The general contractor for the new Carnworth Road development is Trollope & Colls Ltd. Principal sub-contractors are: West's Piling & Construction Co. Ltd., Pierhead Ltd., the Morris Singer Co. Ltd., Brightside Heating & Engineering Co. Ltd., T. Clarke & Co. Ltd.

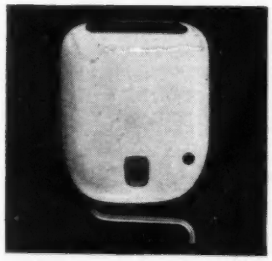


● *The new building is well under way. Most of the structural frame and flooring has been erected.*

Now is the time to push

Whether it's just for sink or wash basin, or for general domestic use, NEW WORLD Water Heaters provide really hot water with minimum maintenance and maximum efficiency. Easy to fit, economical to run, there is a NEW WORLD model to provide ample hot water for the small or large household.

NEW WORLD Water Heaters



The NEW WORLD Speedlyn. With its 1½ gallons capacity and rapid re-heating rate, the Speedlyn will satisfy all normal demands at sink or wash basin.

The NEW WORLD Stratalyn. Neat and compact, the Stratalyn can be attached to an existing cylinder or tank in an airing cupboard, or under the draining-board. Can be used as an auxiliary to a solid fuel boiler or as a sole means of water heating.

The NEW WORLD Circulyn. Suitable for attachment to storage vessels of up to 100 gallons capacity, the Circulyn supplies ample hot water at bath, basins and sink when connected to a new or existing cylinder or tank.

Sell NEW WORLD PRODUCT OF Radiation Ltd **Water Heaters**

* All NEW WORLD Heaters are finished in stain-resisting vitreous enamel.

RADIATION GROUP SALES LTD., 255 NORTH CIRCULAR ROAD, LONDON, N.W.10. WILLESDEN 1234

3.6% more gas sent out

WEST MIDLANDS OUTPUT FOR 1959-60: A RECORD

THE gas output of the West Midlands Gas Board in 1959-60 was a record. This was announced by the Chairman, Mr. G. le B. Diamond, C.B.E., in a half-year report to the area Consultative Council.

Mr. Diamond said: 'In the year as a whole temperatures averaged 2°F. above normal. Under these circumstances the increase in gas sent out of 3.6% compared with 1958-59 was gratifying. The total output of 355 mill. therms was higher than 1955-56, the previous record year, by 0·8%'.

Two Easters

The record was helped by the leap year day and by the fact that 1958-59 contained two Easters and 1959-60 none. These factors accounted for 0.9% of the 3.6% increase.

For the year 1959-60 appliance sales were also likely to prove a record. Gas fires sold amounted to 13,762 (16% more than in the previous year) and more than twice as many refrigerators were sold. Cooker sales were 2% higher and water heaters 4%, but other appliances failed to maintain the previous year's level.

Thermal efficiency in 1959-60 was 79·6% compared with 78·5% the previous year. This was reflected in an estimated reduction in manufacturing costs of a third of a penny per therm, achieved despite a higher average weekly wage to operatives.

Total distribution

While domestic sales of gas were 5% lower in the six months ended March, 1960 total gas distributed was 5.6% higher. This was due to a 14.4% increase in sales to large industrial consumers.

Domestic sales of coke in the second half of the financial year were 4.5% higher than in the same six months of 1958-59.

'Smoke control areas', said Mr. Diamond, 'though containing only a very small proportion of the total dwellings of the area, were beginning to exert a noticeable influence on sales.'

But losses to fuels competitive with coke in industry were still being experienced; sales fell by 0·3% at a time when industrial fuel usage was rising.

For 1959-60 as a whole sales were 942,200 tons, 2.3% below those of 1958-59.

SUPPLY CHANGE-OVER

The Northern Gas Board have changed the gas supply in the Alston area of Cumberland, from coal gas to a butane-air mixture. Adjustments are being made to consumers' appliances before they use the new supply.

New gas meter diaphragm lab.

PARKINSON COWAN (Metropolitan Leather Co. Ltd. Division) are to open a new gas meter diaphragm testing and research laboratory at their Great Harwood, Lancs., factory.

Included in the Metropolitan Leather research programme are continued investigations into the use of polymer as diaphragm material—an activity first undertaken by the company as long ago as 1952.

Equipment installed in the laboratory has been specially designed to test new products so thoroughly that the need for subquent field trials is virtually eliminated.

GASHOLDERS ORDERED

P. G. ENGINEERING LTD., Stockton-on-Tees, one of the Power-Gas group of companies, has received orders for the construction of several new gasholders. These include a holder at the Scunthorpe works of John Lysaght, Ltd., two holders for Richard Thomas & Baldwins, Ltd., Wales, and five holders for a large fertiliser factory in India. The orders are worth about £1 mill.

New loan scheme to aid central heating buyers

'PERSONAL loan' facilities for buyers of gas or coke central heating systems are to be made available immediately by the twelve area gas boards through Scottish Midland Guarantee Trust Ltd. Loans covering the whole or part of the cost of equipment and installation will be made for periods up to five years.

The main object of the scheme is to help owners of existing property who want to install one of the modern gas- or coke-fired central heating or warmed-air systems in their homes.

'Many thousands of people are already enjoying the benefits offered by modern automatic gas and coke central heating installations, which have aroused tremendous interest,' Sir Henry Jones, Chairman of the Gas Council, said last week.

'The object of this plan is to bring these benefits within the reach of many more thousands of householders who, at present, lack the comfort that these systems can provide.'

The charges will be calculated at only 4½% a year on the amount of the loan, less income tax relief. For customers paying tax at standard rate, the net rate is 2¼%: on a loan of £150 repayable over five years, net monthly payments work out at £2 16s. 11d. These exceptionally favourable terms include free life assurance for customers below the age of 56.

Part of the cost of a central heating installation may rank as maintenance and a claim may then be made against Schedule A tax.

Main purged in night operation

NITROGEN has been used to purge a new 4,750-yard long and 24-in. diameter steel gas main in Yorkshire. The pipeline, which is of all-welded construction, runs from Sheffield Road, Rotherham, to the Car House works, Rotherham, forming part of the area grid. Work was carried out at night by British Oxygen Gases, Ltd., for the East Midlands Gas Board.

The object of the operation was to purge the main of air so as to remove the danger of an explosive air/gas mixture during the introduction of coal gas into the main at a later date.

Due to the quantity of nitrogen required, normal cylinder supplies in the gaseous state were excluded and the Gas Board decided to use liquid nitrogen vaporised on site by an evaporator using propane for the heat source. The propane was also supplied by British Oxygen Gases.

Two liquid nitrogen tanks from the Leeds works of British Oxygen Gases took part in the work. Each contained the equivalent of 30,000 cu.ft. of free nitrogen gas which was pumped through the main at the rate of 100 cu.ft. per minute.

The evaporation process, supervised by British Oxygen Gases personnel, was carried out in a hot water evaporator. The water was provided on site by the works fire brigade of Steel, Peech & Tozer.

To prevent interference with traffic, the operation took place on two consecutive nights, 30,000 cu.ft. of nitrogen being supplied each night.

COKE-OVEN CONTRACT

The Redheugh Iron & Steel Co. Ltd., Dunston-on-Tyne, have received a £200,000 contract for the design and erection of a coke-oven plant at the Spencer Works, Llanwern, belonging to Richard Thomas & Baldwins Ltd.

PERSONAL NOTES

MR. MAURICE K. GOMME, formerly divisional manager of Electrolux Ltd.'s South Eastern division, Hampton Court, Surrey, has been appointed to the General Sales Manager's staff at the company's head office. Succeeding him as Divisional Manager is his former deputy manager, MR. ALEXANDER PRESTON. MR. GEORGE W. ANDERSON, formerly assistant to the manager of the company's London division, is the new Deputy Manager of Electrolux's South Eastern division. His successor is MR. E. A. HARDING, formerly an area manager with the company's Western Division at Bristol. MR. WILLIAM BUCK, formerly an area manager in Electrolux Ltd.'s Liverpool and North Wales Division, has been appointed Assistant to the Manager of the company's Yorkshire and North Lincolnshire division.

MISS NORA WRIGHT, Senior Home Service Adviser, Edinburgh and South-Eastern Division of the Scottish Gas Board, will shortly take up the appointment of branch liaison officer with the Women's Gas Federation, at their headquarters in London. Miss Wright joined the Scottish Gas Board in 1958. In the course of the past year she has been the mainspring behind the formation of seven branches of the Federation in Edinburgh and South-Eastern Division. These are Galashiels, Edinburgh, Musselburgh, Falkirk, Dumfries, Haddington and Leith.

MR. F. G. SYMON, Regional Production Engineer for the Southern Gas Board's Reading and Oxford Regions, will be going to the Malta Gas Board on secondment terms at the beginning of July. This follows a request recently made by the Colonial Office for the services of a competent gas engineer, with particular knowledge of Segas plants, to help the Government of Malta develop the gas industry in Malta and Gozo.

MR. REGINALD S. HINDER, Press and Information Officer of the Gas Council, has been elected a member of the committee of the London Press Club for the eighth time. He is Captain of the Press Club's Golf Circle and also Hon. General Secretary of the Press Golfing Society.

MR. R. G. FLEMING, who for the past eight years has been at Barnet, has been appointed District Representative at St. Ives, Hunts., for the Eastern Gas Board. He will be responsible for all sales and service matters in the area.

MR. T. H. STAYMAN has been appointed Managing Director of Head Wrightson Iron & Steel Works Engineering Ltd.

DR. R. S. EDWARDS, Chairman of the North Eastern Gas Board, has been appointed a magistrate at Harrogate.

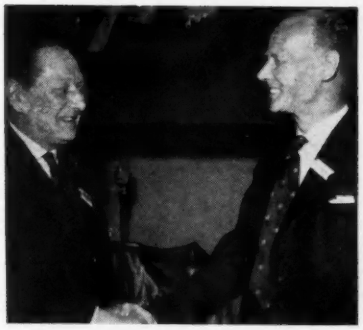
Awards for gas board editors

FOR the high quality of content and presentation of their magazines two Gas Board editors were awarded certificates of merit in the National House Journal Competition 1960, organised by the British Association of Industrial Editors.

One was Miss J. M. Stefani, Editor of *Modern Living*, the quarterly magazine published for consumers by the North Thames Gas Board. The other was Mr. A. A. Clark, editor of *E.G. News*, the monthly newspaper for staff of the Eastern Gas Board—who, incidentally, won this award for the third successive year.

In the competition for the trophy for the 'House Story of the Year,' which is a major award of the Association, Mr. E. H. Dodimead, Editor of the North Thames Gas Board's *Thames Gas Magazine*, was a finalist. His story of the first voyage of *Methane Pioneer* received a Highly Commended.

Mr. Dodimead has been elected as Chairman for 1960-61 of the British Association of Industrial Editors. He has also been re-elected, for the third successive year, as Chairman of the Industrial Welfare Society's Industrial Editors Group.



Newly elected as Chairman of the British Association of Industrial Editors, Mr. E. H. Dodimead (right), *Editor of the North Thames Gas Board's 'Thames Gas Magazine,' is wished a successful year of office by the retiring chairman, Mr. R. H. Carruthers, Public Relations Officer of International Computers & Tabulators Ltd.*

MR. ALFRED ROBENS, M.P., has been appointed a deputy chairman of the National Coal Board with effect from October 1, 1960. Mr. Robens will succeed SIR JAMES BOWMAN as Chairman of the National Coal Board when Sir James' term of appointment expires on January 31, 1961. MR. E. H. BROWNE, C.B.E., Chairman of the West Midlands Division of the National Coal Board, has been appointed a deputy chairman of the National Coal Board with effect from September 1, 1960, when SIR JOSEPH LATHAM'S resignation takes effect.

MR. S. G. VANE has been appointed Managing Director of the Guernsey Gas Light Co. Ltd., MR. J. E. MORRIS has been appointed Engineer and Manager, MR. H. E. WINTERFLOOD, Secretary, and MR. D. HINSHAW, Distribution and Service Engineer.

MR. W. J. MASON, who has been gas manager at St. Ives, Hunts., in the Cambridge Division of the Eastern Gas Board since 1942 when he succeeded his father, has been appointed to take charge of distribution in the Huntington, St. Ives and St. Neots area.

MR. G. E. ANDERSON, Manager of the East Coast Grid of the Northern Gas Board, has retired after nearly 43 years' service. Before January, 1955, Mr. Anderson had acted as production engineer of the Board's Tyneside Division.

MR. J. D. ARMSTRONG has been appointed Assistant Engineer, Shrewsbury District, West Midlands Gas Board.

60-YEAR-OLD COKING PLANT CLOSES DOWN

THE Avenue coking plant, Wingerworth, will take over the Grassmoor, near Chesterfield, plant's existing contracts to supply gas to the East Midlands Gas Board. The Grassmoor plant, which recently has been producing 2,500 tons of smokeless fuel a week, is to be closed.

The Grassmoor plant has produced coke for well over 60 years, and it was there that the Coal Board's prize smokeless fuel—Warmco—was pioneered.

COMING EVENTS

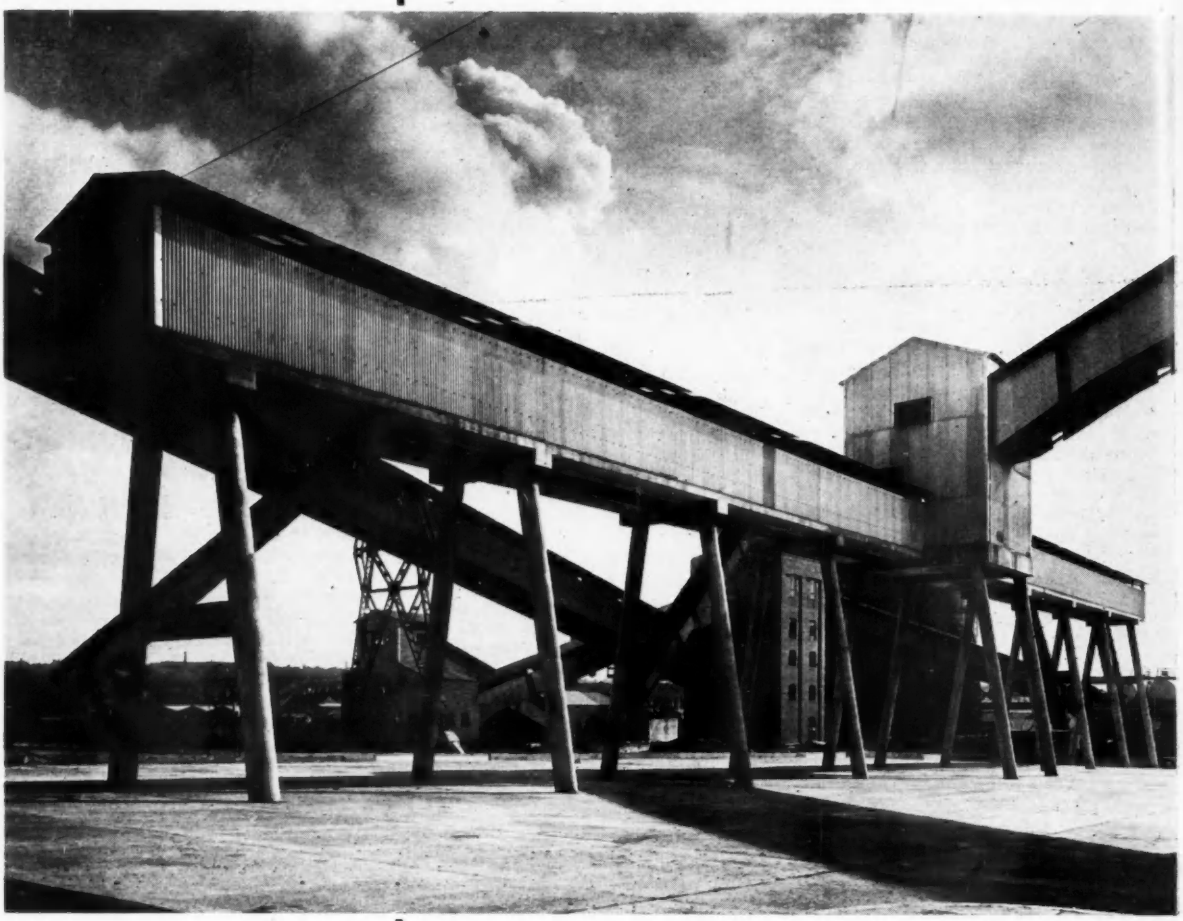
July 1.—MANCHESTER AND DISTRICT SECTION, I.G.E.: Denton gasworks, Manchester. Chairman's Day. 10 a.m.

July 1.—MIDLAND SECTION, I.G.E.: Botanical Gardens, Birmingham. Summer Meeting and Ladies' Day. 10 a.m.

OBITUARY

MR. R. W. E. GASKIN, a director until his retirement a few years ago of Smith Meters Ltd., has died. Mr. Gaskin joined the company in 1915. In 1927 he became works manager, and was responsible for the introduction to the gas industry of the small cased domestic meter incorporating the use of radial valves and open-top construction. Later he collaborated with the late Ernest Smith and Arthur Charles in the development of the first dual coil meters. He was appointed director in 1939 and retired in 1953.

FUNCTIONAL DESIGN FOR GASWORKS



The illustration shows coke conveyor supports constructed for Woodall-Duckham Construction Company Limited at the Pleck Gas Works of the West Midlands Gas Board . . . . . Walsall

PETER LIND & COMPANY LIMITED

LONDON